Appendix 6-A Underground Test Hole Core Logs

KEY TO SYMBOLS

SANDSTONE



CEMENT



MUDSTONE



BENTONITE



MUDDY SANDSTONE



20-40 MESH SILICA SAND



SANDY MUDSTONE



CORE SAMPLE



SHALE



COAL

		LUGIC LUG	PAGE 1 OF 6				
1	Name: GROUND WATER INVESTIGATION ient: CO-DP MINING COMPANY	-	Boring/Well Number: DH-1A Boring/Well Location: 395059.18 N 2112761.51 E				
Project	Number: UC-192-06	Reference	erence Elevation: 7535.71				
Date Dri	Hed: 06 AUG 1991		Reference Point: MINE FLOOR Drilling Contractor: CO-OP MINE PERSONNEL				
Logged by			dethod: HYDRAULIC ROTARY Rig Type: DIAMEC 251				
First oc	currence of G.W.: 114.0' Static W.L.: 114.0'		oth (Ft): 535' Hell Depth (Ft): 171'				
Dates Me	osured: 06 AUG 91 21 APR 92	Boring Dia	ometer (in): 2.9"				
	LITHOLOGIC DESCRIPTION		용 WELL COMPLETION				
OEPTH (FT	AND OBSERVATIONS		DETAILS				
🕏 🧲	7.11.0 0302.1111123.10		DETAILS				
0-	COAL: Bottom coal. Good care.						
-			Slip Cap with Cover				
	MI POTONE						
	MUDSTONE: Gray, Hard, Good core, Carbonace	euo banding.					
10-							
	SANDSTONE: Very Fine grained. Sub-rounded g Finely laminated. Gray to light Occasional carbonaceous stringer	rains.					
	Occasional carbonaceous stringer	gruy curur. S.					
20-							
~]							
	Medium cross-bed sets.						
1 3	Heatam Cluss-Dea Sets.		Cement				
]							
30-	Carbonaceous stringers						
1							
1 3							
40—	Carbonaceous stringers,						
	Gray-white color with dark gray carbonaceous						
50-	stringers on cross-beds.						
<u> </u>	OAMBY HIDOTOM						
	SANDY MUDSTONE: Fine laminations. Varying propor sond and silt.	rtions of					
60							
]]	SANDSTONE: Clean, with carbonaceous stringe	ers on cross-					
]	beds between intervals of clean	sand.					
70-							
]							
	Carbonaceous stringers and low angle cross-beds.						
			Bentonite Grout				
80—							
~	• •						
]]							
]]							
90-							
-	COAL: Hiawatha Coal seam.						
_							
-		•					
100							

		Name: GROUND WATER INVESTIGATION	Boring/Wel	Boring/Hell Number: DH-1A				
		lient: CO-OP MINING COMPANY	Boring/Well Location: 395059.18 N 2112761.51 E Reference Elevation: 7535.71					
		Number: UC-192-06	Reference Paint: MINE FLOOR					
1	te Dri gged b	illed: 06 AUG 1991 by: JDG	Drilling Contractor: CO-OP MINE PERSONNEL					
		courrence of G.W.: 114.0' Static W.L.: 114.0'	Boring Dep	th (Fi	HYDRAULIC ROTARY Rig Type: DIAMEC 251 tl: 535' Well Depth (ft): 171'			
Da		easured: 06 AUG 91 21 APR 92			(in): 2.9"			
DEPTH (FT)	GRAPHICAL LOG	LITHOLOGIC DESCRIPTION AND OBSERVATIONS		SAMPLE LOC.	HELL COMPLETION DETAILS			
100-		SANDSTONE: Light gray-white colored. Spring Cany of the Star Point Sandstone.	on Tangue	1				
110-		Fine-medium, rounded grains. Laminated.	•					
		Fewer carbonoceous stringers. Low angle cross-be	eds.					
120-		Carbonaceous stringers increase			1.5" PVC Casing			
130-		Horizontal laminations. Massive bedded.						
140								
					20-40 Mesh Silica Sand			
150-		Massive bedded. Fine-medium grained. Low angle cross-beds. Dark minerals.						
160-					1.5" PVC Slot Screen			
170-		Locally dense carbonaceous stringers. Fining to Fine-very Fine grained.	·					
		Coarsening to fine-medium grained.			Threoded End Plug			
180—		MUDDY SANDSTONE: Dark gray colored.			Cement Plug			
190-		MUDSTONE: Sandy. Dark brown-gray colored.	Mancos		Sement Flog			
200		SANDY MUDSTONE: Marbled.						

Pr	oject	Name: GROUND HATER INVESTIGATION	Boring/Well	Number:	PAGE 3 OF 6		
Ом	ner/CI	ient: CD-OP MINING COMPANY			395059.18 N 2112761.51 E		
Pro	oject	Number: UC-192-06	Reference Elevation: 7535.71 Reference Point: MINE FLOOR				
			Drilling Co	ntractor: C	0-OP MINE PERSONNEL		
	gged b				AULIC ROTARY Rig Type: DIAMEC 251		
		courrence of G.W.: 114.0' Static W.L.: 114.0'	Boring Dept Boring Diam				
	8	02 111 32	Der ving Brain	(111)	2.3		
Œ	1 1	LITHOLOGIC DESCRIPTION		99	WELL COMPLETION		
OEPTH	GRAPHICAL	AND OBSERVATIONS		SAMPLE L	DETAILS		
용 200—	88			SS			
-		SANDY MUDSTONE: Alternating marbled and lamination inter-beds.	ed muddy				
=							
-							
210—							
-							
-							
-							
220—		MUDSTONE: Gray-brown colored. Marbled. La	ninated.				
7							
111		SANDY MUDSTONE: Marbled, Laminated,					
-		Laminations increasing. Sand decreasing.					
230-							
-		Sandy					
4							
3							
240-							
=							
=	=-=	SANDSTONE: Fine-very fine grained Clean L	OH GOOLA				
250-		SANDSTONE: Fine-very fine grained. Clean, L cross-beds. Storrs Tongue of the Sandstone.	Star Point				
-30-		MUDDY SANDSTONE: Laminated, Marbled, Bioturbated	l Sand				
-		and mud proportions vary local	y				
3							
60-		· · · · · · · · · · · · · · · · · · ·					
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1							
70							
4							
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=							
80-		• •					
=							
1		SANDSTONE: Clean. Low angle cross-beds. oc	casional				
90-		carbonaceous stringers.					
7			. 1				
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<u> </u>		Name: COUNTY HATED		HTURUGEUL			PAGE	4 OF 6	
		Name: GROUND WATER			Boring/Well		DH-1A		
		lient: CO-OP MINING	CUMPANT			Location: 395059.18 N 2112761.51 E Elevation: 7535.71			
Pro	oject	Number: UC-192-06				.levation: 75 Point: MINE F			
Dat	te Dri	illed: 06 AUG 1991					-OP MINE PERSONNEL		
	ged t						JLIC ROTARY Rig Type: D	TAMEC 251	
		courrence of G.W.:	114.0' Static I	I.L.: 114.0'		h (Ft): 535'			
	tes Me		06 AUG 91	21 APR 92	Boring Diameter (in): 2.9"				
	LOG							****	
DEPTH (FT)		L	ITHOLOGIC DESCR	RIPTION		20]	WELL COMPLETION	100	
⊭	SRAPHICAL		AND OBSERVATI	ONS			DETATI O		
	₽.	*				SAMPLE	DETAILS		
300-		SANDSTONE:	Occasional cart	onaceaus parting	5.				
=				, ,					
]		Pyritized fracto	une.						
]									
310-				•					
		. •							
]		MUDDY SANDSTONE	: Mud increasing Bioturbated.	downward. Lamina	ted.				
			STOCKE DUCED.						
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320-					,				
3									
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3				6					
330									
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}									
340-									
		MUDSTONE :	Occasionally sa	ndy Marbled La	ninated.				
]	薑		uark gray color Mancos No. 2.	ndy, Marbted, La ed, Locally biot	urbated.				
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350	噩								
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360-									
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370	ᆲ				and the second				
	픨								
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380-		SANDY MUDSTONE:	Marbled. Bioturt locally.	oated. Varies to	mudstone				
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Pro	oject	Nome: GROUND WATER INVESTIGATION	Boring/Hell Number: DH-1A				
		ient: CO-OP MINING COMPANY	Boring/Well Location: 395059.18 N 2112761.51 E Reference Elevation: 7535.71				
		Number: UC-192-06	Reference Point: MINE FLOOR				
	ged b	lled: 06 AUG 1991 y: JDG	Drilling Contractor: CO-OP MINE PERSONNEL Drilling Method: HYDRAULIC ROTARY Rig Type: DIAMEC 2				
		currence of G.W.: 114.0' Static W.L.: 114.0'	Boring Depth (ft): 535' Well Depth (ft): 171'				
Da		asured: 06 AUG 91 21 APR 92	Boring Diam	neter	(in): 2.9"		
OEPTH (FT)	GRAPHICAL LOG	LITHOLOGIC DESCRIPTION AND OBSERVATIONS		SAMPLE LOC.	WELL COMPLETION DETAILS		
400-		SANDY MUDSTONE					
	===	SANDSTONE: Low angle cross-beds. Fine-coar	se grained.				
410-		SANDSTONE: Low angle crass-beds. Fine-coar Dark minerals. Oscasional muddy Thin-medium bedding. Moderate-p Appears to be more pourous than Panther Tangue of the Star Poin	oor sorting. upper units. t Sondstone.				
1 1							
420-							
1111							
430-		Circulation loss					
130							
440							
450-							
460-		Mud-lined Fracture.					
470—							
1		Losing circulation					
480							
		Muddy bonds in white sandstone increasing.					
490-							
500-1							

Pro	ject	Name: GF	ROUND WATE D-OP MININ	R INVESTI				I Loca	ation: 39505	9.18 N 2112	PAGE 6 OF 6
Pro	ject	Number:	UC-192-06				Reference	Elevot	tion: 7535.71	L	
Dot	te Dri	Hed: 06	AUG 1991				Reference Point: MINE FLOOR Drilling Contractor: CO-DP MINE PERSONNEL Drilling Method: HYDRAULIC ROTARY Rig Type: DIAMEC :			NEL	
	ged b										
						I.L.: 114.0'	Boring Dep			Well Do	epth (Ft): 171'
Dat		asured:		06 AUG 9	1	21 APR 92	Boring Dia	meter	(in): 2.9"		
E	907 7			LITHOLOG	TO DESCR	TETTON		نا		HELL COMP	N ETTON
DEPTH (FT)	GRAPHICAL							SAMPLE LOC		WELL COMP	*
GE 5	38AP			ANU U	BSERVATI	UNS .		튙		DETAIL	. S
500		SANDS	TONE:					1888	VIIIIIIII		
=	===	SANDY	MUDSTONE	. White c	olored, f	ine to medium o	grained				
				notebum	ne gradin e. Heavi	ine to medium of g to dark gray- ly bioturbated	-bго нп		<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	Cement	Plug
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10-		SHALE	: #	Moncos	Shale.						
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Project Nome: GROUND WATER INVESTIGATION Owner/Client: CO-OP MINING COMPANY			Boring/Well Number: DH-2				
			Boring/Hell Location: 397775.88 N 2112519.39 E				
roj	ect I	Number: UC-192-06	Reference Elevation: 7557.18				
Date Drilled: 16 DEC 1991 .ogged by: JDG & AM			Reference Point: MINE FLOOR Drilling Contractor: CO-OP MINE PERSONNEL				
			Drilling Method: HYDRAULIC ROTARY Rig Type: DIAMEC 251				
		currence of G.W.: 22.98 Static W.L.: 22.98	Boring Depth (Ft): 530' Well Depth (Ft): 190'				
Ī	o ne	Deured: 16 DEC 91 21 APR 92	Boring Diameter (in): 2.9"				
- 1	8						
	SAPHTCAL LOG	LITHOLOGIC DESCRIPTION	HELL COMPLETION				
	ERAP.	AND OBSERVATIONS					
'士		SANDSTONE Light gray sondstone					
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1	.	Light and parties					
=		Light gray sandstone	Cement				
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=		Muddy (dark brown cuttings)					
=		Coop (out Diowi) cuttings)					
1			1 5" PVC Cosing				
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]							
1		Light gray sandstone resumes					
3							
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1		•					
1							
		Clean light gray sandstone					
_		CDAL Highatha Coal seam	Bentonite Grout				

290-

480-

490-

-	lane: GROUND HATI	ER INVESTIGATION	1	Boring/Hell			PAG	
	ent: CO-OP MINI Jumber: UC-192-06			Reference E	levati	ion: 7557.18	.88 N 2112519.3	9 E
Date Drilled: 16 DEC 1991				Reference Point: MINE FLOOR Drilling Contractor: CO-OP MINE PERSONNEL				
ogged by							TARY Rig Type: D	IAMEC 251
		22 98' Stotic W.L.: 22 98		Boring Dept	h (ft)	5301	Hell Depth (f	
otes Med	sured:	16 DEC 91 21 AF	PR 92	Boring Diam	eter ((in): 2.9"		
83								
GRAPHICAL L		LITHOLOGIC DESCRIPTION			8		HELL COMPLETION	
GRAPHICAL		AND OBSERVATIONS			SAMPLE		•	
╅┷┪	SANDSTONE		coors	orgined	1888		DETAILS	
]		Light gray colored Fine Dark minerals Occasiona Bioturbathed Increasing	mudd	parting				
3 1		mud.	• •					
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	SHALE	Mancas Shale		tion of a management				
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	•						Bentonite Gr	rout
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Muddy sandstone/sandy mudstone Fine-very fine grained Gray colored Nossive-laminated bedding Bioturbated Well cemented Very hard Reacts with HCI

Top of Mancos No 1

180-

190-

_ Threaded End Plug

_1 5" PVC Slot Screen

- Bentonite Plug

_			ING L OG		PAGE 3 OF 6			
		Nome: GROUND HATER INVESTIGATION	Boring/Well					
UMI	er/CI	ent: CO-OP MINING COMPANY	Boring/Hell Location: 394514.78 N 2113242.89 E					
Pro	ject l	lumber: UC-192-06	Reference Elevation: 7520.94 Reference Point: MINE FLOOR					
Dat	e Dri	led: 29 JAN 1992	Drilling Contractor: CO-OP MINE PERSONNEL					
	ged by				HYDRAULIC ROTARY Rig Type: DIAMEC 251			
		currence of G.H.: 125.28' Static H.L.: 125.28'	Boring Depth	h (ft)): 545' Hell Depth (Ft): 190'			
Dat	es nec	29 JAN 92 21 APR 92	Boring Diame	eter 1	(in): 2.9"			
	907							
E	<u> </u>	LITHOLOGIC DESCRIFTION		Ց				
DEPTH (FT)	GRAPHICAL			34K	HELL COMPLETION			
200-		AND OBSERVATIONS SANDY MUDSTONE Sandy mudstone/muddy sandsta		্র্ছ জন্ম	DETAILS			
:]===	SANUY MUDSTONE Sondy mudstone/muddy sandsto Gradational contacts Medium	ne -very					
:	Į≘≣∃	fine grained Dull Tuster G smooth feel. Unweathered Sa	ritty- ndy					
=	∃≣≣	Gradational contacts Medium fine grained Dull luster G smooth feel Unweathered Sa units are gray (5Y6/1) Mudd are gray-brown (5Y4/1) Hord	y units Pre-					
210-]===	dominantly quertz with minor minerals Mica along muddy p Laminated Low angle cross-b Bioturbated Non-fractured	dark ortinas					
-	===	Laminated Low angle cross-b Bioturbated Non-fractured	eds Cores ore					
] :	1===	in excellent condition						
-]===							
-	1 ∃∃]							
220-	1===1							
-]===							
:	===				Bentonite Plug			
] =	===							
230-	===	SANDSTONE Sondatone/muddy_appdatone_G	e e e e e e e e e e e e e e e e					
-	1	SANDSTONE Sandstone/muddy sandstone G Fine grained Storrs Tongue Point Sandstone	of the Star					
4		Paint Sandstone						
-								
240		Muddy and bioturboted						
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‡		Laminated and bioturbated						
250-	ļ	commoted and pioturbated						
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260-		Sand increasing						
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90-		Sand and muddy sand						
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			LING LUG		PAGE 9 OF 6		
		ome: GROUND WATER INVESTIGATION	Boring/Hell				
Онпег	/Cli	ent: CO-OP MINING COMPANY	Boring/Hell Location: 394514.78 N 2113242.89 E				
Proie	ct N	umber: UC-192-06	Reference Elevation: 7520.94				
			Reference Point: MINE FLOOR				
		led: 29 JAN 1992			ton: CO-OP MINE PERSONNEL		
Logge					HYDRAULIC ROTARY Rig Type: DIAMEC 251		
		urrence of G.W.: 125.28' Static W.L.: 125.28'	Boring Dept				
Dates	Mea	sured: 29 JAN 92 21 APR 92	Boring Diam	neter	(in): 2.9"		
				1			
_	울			8			
=	<u> </u>	LITHOLOGIC DESCRIPTION			WELL COMPLETION		
DEPTH IFT	GRAPHICAL	AND OBSERVATIONS		SAMPLE	DETAILS		
300	-	SANDSTONE		18383	DETAILS		
		SINDOTONE					
		Clean Sand					
}	- 41		^				
310-	.]						
4							
=		Muddler and bioturbated					
‡							
‡	İ						
320-							
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1					Bentonite Plug		
#	1						
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330-							
7.							
7	- }	Grading to muddy sand					
7							
	1						
340	==	SANDY MUDSTONE Muddy sandstone/sandy mudston Gradational contacts Dark gri	e				
3=	ΞΞ	brodational confacts. Dark gri brown colored	oy-				
	==						
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350	==	Top of Mancos No. 2					
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370-	<u>=</u>	Sandy mudstone/mudstone					
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-1-00	<u> </u>			1888			

		ENGINEERING,		ING LOG		PAGE 5 OF 6	
		Name: GROUND HAT ient: CO-OP MINI			Number: DH-3		
		Number: UC-192-06		Boring/Hell Location: 394514.78 N 2113242.89 E Reference Elevation: 7520.94			
				Reference Point: MINE FLOOR			
	ged by	lled: 29 JAN 199 y: JRP	2	Drilling Contractor: CO-OP MINE PERSONNEL			
Fir	** oc	currence of G.W.:	125.28' Static W.L.: 125.28'	Boring Dept	th (ft): 545'	IC ROTARY Rig Type: DIAMEC 251 Hell Depth (Ft): 190'	
Do	tes Med	osured:	29 JAN 92 21 APR 92		neter (in): 2		
	9						
E	901 NJ	e e	LITHOLOGIC DESCRIPTION		8		
DCPTH (FT)	GRAPHICAL		AND OBSERVATIONS		SAMPLE	HELL COMPLETION	
400-	-===	SANDY MUDSTONE		-	22	DETAILS	
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410-	1555						
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:	15-5	SANDSTONE	Medium-fine project Sub-cookle				
	1		Medium-fine grained Sub-angula sub-rounded grain texture Mode sorting Little or no weathering Gray colored with dark minerols Predominantly quartz, with musc along muddy portings Calcite a Mossive bedded with laminations locally Bioturbated Few fract Core is in excellent condition Panther Tongue of the Star Pain	rate		Bentonite Grout	
430-			Gray colored with dark minerals Predominantly quartz, with musc	Hord Ovite			
:			along muddy portings. Calcite c Mossive bedded with laminations	ement			
:	1		Core is in excellent condition Panther langue of the Star Pain	ures			
:			Sandstone				
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PROJ	ECT No:	HOLE No: TS-6 DIRECTIC	DN: UP DRILLING ANLE:	_ 180
DRILL	HOLE LO	CATION:		90
DRILL	ER:	START DATE;	END DATE:	<u> </u>
i .	STANT:_	1	END TIME:	
Depth	Graphíc Log	Geologic Description	Comments	
- - -				
30° _				
<u>-</u>				
275-		8" Coal		
250 <u> </u>		51 Com!		
		R' Coal (Tank Gam)		
2 ²⁵ no	· · · · · · · · · · ·	(5' Core)		
· <u></u>	 	(oid bogged).		
25 <u> </u>		Sandstone		
		Roof Con1	Blind Canyon Sean	~





PROJ	IECT No	: HOLE No: T	5-7 DIRECT	TION: UP DRILLING ANLE: 180	180
DRILL	HOLE LO	OCATION: 51 North	1 Between	a 1 md 2 Right 90	0
DRILL	_ER:		START DATE:	: 10/31/91 END DATE: 11/4/91	
ASSI:	STANT:		START TIME: .	END TIME:	
Depth	Graphic Log	Geologic Descr	iption	Comments	
120					
<u>.</u>					
100		Shele			
_		Saltone			
_					
80 -		3' Coul			
· · · · ·					
60		Beldel Brann whi	to of Grey		
_		Som distore			
40_					
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20					
•		2 Coul Shale			
		Shale Carl		Roof Coal (Blad Conton See	i1)





PROJEC	T No:	HOLE No: TS-7 DIRECTION	ON:_	DRILLING ANLE:	_ 180
DRILLHO	LE LO	CATION:			90
DRILLER	₹:	START_DATE:		END DATE:	
ASSISTA	ANT:_	START_TIME;		END TIME:	
	Graphíc Log	Geologic Description		Comments	
240		1 Co.l			
20		Z'Cal		ore Rrilled ug Brilled	
200		Bedded Sandstone			
\fo		Shale 2' Carl			
60		Budded Sandstore			
140		1 Conl Sc. distance	+	/	





PROJ	ECT No	HOLE No: TS-7 DIRECTION: DRILLING ANLE:	180
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DRILL	.ER:	START DATE: END DATE:	
		START TIME: END TIME:	
Depth	Graphíc Log		
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-	-		
_] [
	-{ }		
3 50 €		Shile 1	
_	65.		
_			
_			
280		Bedded Sondstone	
-			
26:		fly Orilled	
****		fly Willed	
, <u></u>		8' Coal	
-			
	25.25		



C. W. MINING COMPANY



DRILL HOLE LOG

PROJ	IECT No	: HOLE No: TS-	<u>8</u> DI	RECTION:	DRILLING	ANLE:	180
DRILL	HOLE LO	DCATION:					90
DRILL	.ER:	S	TART [DATE:	END DATE:		
ł					END TIME:		
Depth	Graphic Log	Geologic Descript				nents	
120 -		She					
		2' Cazl Shale					
100		/ha @					T
_							
-	225000	1' Con!					
80							
						· · · · · · · · · · · · · · · · · · ·	
_	-						
60	12.55.75						
_							
	-		# ************************************				
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Ho	17.5		······································				
_							
							
. —			· · · · · · · · · · · · · · · · · · · 				
Co				· · · · · · · · · · · · · · · · · · ·			
_		4 Cool (Split)					
,						**************************************	
		Shale					
=		31 Con 1		Rort	Coal Bla	d Congar	Som





PROJ	ECT No:	HOLE NO: TS-8 DIRECTION:	DRILLING ANLE:	180
DRILL	HOLE LO	CATION:		90
DRILL	ER:	START_DATE;	END DATE:	<u> </u>
4		START_TIME:		
Depth	Graphic Log	Geologic Description	Comments	
140 _ -		Beddod Sandstone		
_				
·223 _		2' Conl		
		1 Con1		
200		Beddel Sandstone		
-				
180 _				· · · · · · · · · · · · · · · · · · ·
' _				
-	-			
160				
_				
				
	1/3			
140				
		Sandstant		
		Shale	, · · ·	·
		Shelt		





PROJE	CT No	: HOLE No: TS-8 DIREC	TION: DRILLING ANLE:	180
		DCATION:		_ 90
DRILLE	R:	START DATE	: END_DATE:	<u> </u>
		START TIME:		
Depth	Graphic Log	Geologic Description	Comments	
		•		
				717
				
				···
280 _				
	20.762 23.62 23.62 23.62 23.62 24.62			·
		9' Coal (Tank Seam)		
260		·		
. —				
		1' Goal		
E				

	(2
AGE		OF_





PROJ	ECT No:	HOL	E No: TS9	DIRECTIC)N: <u>//</u>	ク DRIL	LING ANLE		180
DRILL	HOLE LOC	CATION:							90
DRILL			START	DATE:_		_ END	DATE:		
ASSIS	STANT: _/_		START	TIME: _		_ END	ГІМЕ:		
Depth	Graphíc Log	Geologic	Description		·	C	ommer	nts	
150									
-									
-									
125	2122A12	1' Coal 5' Shale			\	· · · · · · · · · · · · · · · · · · ·	···		
		5)na(g							
_									
· <u>-</u>		Boddel	Sandstone			<u></u>			*****
(00		90440) and start						
_									
-						······································			
-		3' (oal							
75	- 23334								
•••	-335-						- Minimal Constitution		
_		Bedded							
		Deacs							·
50 _	- 2 2 2 4 2 2 2 4 2 2 2 4								
		C. Tu a							
		Sondstowl					·		-

25									
									
									
	Thett	5' Coal			Roof	Coal	(Blind	Canyon	Sean)





PROJ	ECT No	HOLE NO: TS-9 DIRECTI	ON: DRILLING ANLE:	180
DRILLI	HOLE LO	DCATION:		- 90 - 0
DRILL	ER:	START DATE:	END DATE:	· · · · · · · · · · · · · · · · · · ·
1			END TIME:	
Depth	Graphíc Log	Geologic Description	Comments	
-				
275_				
250_		8 (col (Tank Seam)		
_		2' Conl, 5' Shale H! Shale		
- 225 _		Bedded Sondstone		
		2' Coal, 3' Shale		
		Shale		
200 _				
		10' Sandstore		
10-		5' Shale		
(75 _		1'Cost, 4' Sandstore		
		Shale		
				·

	- 7		7
GE	- 1	OF	_



C. W. MINING COMPANY





PROJ	ECT No.	: HOLE No: <u>TS-10</u> DIRECTI	ON: DRILLING ANLE:	180
		CATION:		90
DRILL	ER:	START DATE;_	END DATE:	المستحجم المسا
ASSIS	STANT: _		END TIME:	
Depth	Graphíc Log	Geologic Description	Comments	
(50 _ - -		7' Shale 2' Carl		
(25 _ - -		3' Shale 5' Shale		
(00 _		Bedded Sundstone 5' Shale 1' Coal		
75 _		(2' Shale 2' Coal		
- 50		Sandstone 2' Shale Sandstone 1' Coal		
25 _ - -		2' Shale		
		6 Coa	Roof Coal, Blind Cango	n Seam





PRO-	JECT	No:	HOLE No	75-10 DIREC	TION:	DRILLING ANLI	E: 180
ł		LOCATION: _					90
DRIL	LER:	· · · · · · · · · · · · · · · · · · ·		START DATE	-	END DATE:	
ASSI	STANT			START TIME		END TIME:	
Depth	Graphic	Geo	logic Des			Commer	
275 .							
251							
			Cool				
225		3					
- -		2. C Sha	le				
20.	# 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3' Ce.	<i>a</i> /				
- -		Bedde	ed Sandstor	16			
175 _		5'5	cal hale				
			Thale				

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- 4	~1	-			 ٠.	•	





PROJECT No: HOLE No: $\frac{TS-14}{}$ DIRECTION: $\frac{V\rho}{}$ DRILLING ANGLE: 1								
DRILLI	HOLE LO	OCATION:		- 90 - 0				
DRILLER: START DATE: END DATE:								
ASSIS	TANT:_	START TIM	E: END TIME:					
Depth	Graphic Log	Geologic Description	Comments					
150 -								
- - 12 5 _								
		12' Mudstone / Shale 4' Sandstone						
100 _		15' Shale / Mudstone						
75 _ -		20' Sandsme 2' Shale 2' (oal						
- 50		Sandstone 2' Cool 4' Shale						
- - -		Sandstone						
25 _ - -								

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Δ	126	7 11	_
м	121	 	





PROJECT No: HOLE No: TS-14 DIRECTION: Up DRILLING ANGLE: 180							
DRILLHOLE LOCATION:							
DRILLER:			START DATE:_	END DATE:			
ASSIS	STANT:_		START TIME: _	END TIME:			
Depth	Graphic Log	Geologic Descr	iption	Comments			
3 00 _ - - -			<u>.</u>				
275 _ - -							
250 _ - -		l'Sandstone 9' Coal 7' Sandstone					
225 _ -		3' Shale/mudstone 2' Coal 8' Shale/mudstone					
- 200 _		12' Sandstone 3' Coal					
_		10' Sand Stone 16' Shale/mudstor	ne.				
175							
_ _		Sand Stone					